

## DOCUMENT RESUME

ED 311 542

EA 021 308

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TITLE Incipient Studies of School-Based Decision Groups.  
PUB DATE 31 Oct 89  
NOTE 27p.  
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.  
DESCRIPTORS \*Decision Making; \*Decision Making Skills; Elementary Education; Management Games; \*Participative Decision Making; \*Problem Solving; \*School Based Management

IDENTIFIERS \*Florida

## ABSTRACT

To address the effectiveness, the process, and the results of decisionmaking groups that include both administrators and teachers, and to discern the difference between the effective and less effective decisionmaking groups, 107 test groups, each composed of one Florida elementary school principal and two teachers from the same school, were studied. A computer mimetics game placed each group, working alone, into the principalship of an elementary school with the assignment to expend existing resources so as to improve the fourth-grade achievement scores. Data concerning the fictional school, its teachers, the students, and the community were provided. Also provided were effective schools research information that could potentially improve the scores and a cost potential in staff time and/or allocated dollars. A total of 437 person-hours of the game were collected for analysis. Results indicate that the decision groups passed through at least three distinct decision phases. The effective decision groups exhibited characteristics that were different from the less effective groups. In addition, the effective groups appeared to mature into a different pattern than the ineffective groups. Implications suggest that the education of an interdependent decision group requires relevant pre- and in-service training of both school principals and teachers. (11 references) (KM)

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INCIPIENT STUDIES OF SCHOOL-BASED DECISION GROUPS

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## INCIPIENT STUDIES OF SCHOOL-BASED DECISION GROUPS

JOHN J. HUNT

### ABSTRACT

"School-based management," "Empowerment," and other such rubrics imply that decisions previously made centrally or singly will and ought to be made "locally," within the school and by groups including the school administrator and teachers. The question addressed in this research: "If school-based management is the trend, and, if such a trend includes within it the expectation that decisions will be made, not in isolation by the responsible administrator at the school, but, in an enlarged circle of decision participants which will include teachers; then how do such school-based decision groups actually make decisions?" Further, "How do effective school-based decision groups make decisions, and, do effective decision groups go about decision-making in discernably different fashions than less effective decision groups?"

Via an interactive computer mimetics "game," one hundred seven decision groups were studied, each from a Florida elementary school selected by the Florida Department of Education to participate in a week long Summer Enhancement Institute and each containing the respective school principal and two teachers from the same school, one with extensive experience and one relatively new. Four hundred thirty-seven person-hours of computer plays were collected. The computer mimetic game placed each group, working alone, into the principalship of an elementary school with the assignment to expend the resources provided so as to improve fourth grade achievement scores. The decision group was introduced within the "game" to data about the school, the teachers, the students and the community; and taught how to "thumb" the information as and whenever the group wished. In addition, the decision group was provided within the computer the effective schools research to which had been attached decision pathways and sub-pathways, each of which had a benefit potential for improving the fourth grade scores and a cost potential in staff time and/or allocated dollars. The actions of each decision group were recorded within the computer and each decision group was observed.

The decision groups appeared to pass through at least three distinct decision phases. The effective decision groups appeared to exhibit characteristics different from the less effective groups. In addition, the decision groups appeared to mature into a pattern different from the ineffective decision groups. Implications are suggested.

INCIPIENT STUDIES OF  
EFFECTIVE SCHOOL-BASED DECISION GROUPS

"School-Based Management. It is an issue high on the agenda of educational reformers." The Executive Director of the AASA opens his November, 1988, letter to the Association's membership with this statement. He argues that educational leaders must, therefore, "...take a look at both what school-based management is and is not." (Miller, 1988)

One feature of school-based management is contained in the rubric "empowerment" and includes the expectation that decisions made at the school site will be made by an enlarged circle of decision participants. Contrasted to decisions made centrally or, at the very least, decisions made "distant" from the local scene, school-based management carries with it the expectation that the same decisions, made "locally," will capitalize upon the research in which is demonstrated the efficacy of site-based decisions; such decisions containing within them a locally perceived "ownership" of the decision and therefore a higher probability for successful implementation. (Ackoff, 1974)

Enlarging the circle of decision participants at the school site carries within it the further expectation that

this larger circle will contain teachers. In some instances the expectation is more nearly a directive. School-based decision making is not intended to transfer previously distant decision-making to a principal working and deciding alone in the office. (Lagana, 1989)

A question of interest to the researcher arises from the above. "If school-based management is the trend, and, if such a trend includes within it the expectation that decisions will be made, not in isolation by the responsible administrator at the school, but, in an enlarged circle of decision participants which will include teachers; then how do such school-based decision groups actually make decisions?" The question is further refinable to ask, "How do effective school-based decision groups make decisions; and, do effective decision groups of this kind go about decision-making in discernibly different fashions than less effective decision groups?"

If effective school-based decision groups do exhibit clearly discernible patterns, there may be valuable implications for educational leaders; implications related, perhaps, to the selection, the training, and the support of school administrators, school-based decision groups; and school district administrators. The possible implications for this latter group, school district administrators, is of particular interest and motivated this inquiry.

District-wide decision makers, struggling to determine who should be promoted into jurisdictions of greater responsibility and decision-making scope, seldom have extensive knowledge about prospect(s)' decision-making skills. Even less frequently is there evidence of how and/or how well the prospect(s)' have performed as part of a decision-making group. And yet, more of the decisions to be faced by the appointee will be made as part of a group. Given the empowerment trend, more decisions will be faced by groups, only one member of which will be the person actually legally responsible for the outcome; the others will be involved because of potential impact upon the decision's effective implementation. (Brandt, 1988)

The preponderance of studies about decision-making have been described as laboratory based and transfer attempts suspect. (Hackman, 1986) Such studies present to us conditions from which it is difficult to generalize. (Woodman & Sherwood, 1980) Shea and Guzzo argue strongly, "We believe that real-world, real-time group effectiveness is what matters and that boils down to the production of designated products or the delivery of contracted services, per specification." (Shea & Guzzo, 1987, p.25)

To overcome this predicament decision-makers have had to be "shadowed" while at work in the actual setting, and records kept related to the decision-maker(s)' activities.

With sufficient shadowing, extensive note keeping, and repeated observations, comparisons begin to yield generalizable patterns. Studies of this kind are laborious, time consuming, cost ineffective, and courageous for researchers, while the results often post date the practitioners' needs.

This study was constructed so as to allow for the collection of more data than is usually collectable through "shadowing." What has come to be called "Computer Mimetics" was developed to relieve some of the hardships related to observational/anecdotal studies and to shorten the time between research conducted and delivered to practitioners.

The "Mimetic" concept can be described succinctly by harkening back to its origins in the animal/reptile world. A bird of prey, airborne and in search of a meal, spies below a small snake. The bird swoops in for the attack, but, upon seeing closely the colorations of the snake ("yellow over red over black") decides to abort its dive and fly on. The bird has seen the colorations of the deadly Coral snake and, therefore, made very important decisions. Later in its flight, the same bird spies another snake below and once again dives. In this instance the bird sees "yellow over black over red," and decides once again to abort the dive; only to have missed a meal from the harmless garden King snake. What the bird of prey saw on its second dive, the

signals it received in the few instants of time within its "decision window," caused it to respond as though it were seeing the real thing; the Coral snake. The fortunate and harmless King garden snake exhibits a "mimetic" characteristic. (Fortunate, except perhaps, when a myopic Coral snake tries to mate with it!)

Using this mimetic concept within the realm of an interactive computer allowed for the creation of a "game" in which the decision group is presented the principalship of an elementary school that has a problem with fourth grade achievement results. The decision group is introduced within the "game" to massive amounts of data about the school, the teachers, the students and the community; and taught how to "thumb" through this information as, and whenever, the group wishes.

In addition, the decision group is provided summaries of the effective schools research. (Havley, 1985) To this has been attached decision pathways and sub-pathways, each of which has with it a decision potential for improving the fourth grade predicament, as well as a cost in staff time and/or in allocated dollars. The problem for the decision group: "Raise the fourth grade scores, within the allocations of staff energy and budget dollars."

The computer observes (and records, in intervals of microseconds) every decision made by the school based

decision group "playing the game." All decision paths examined (contemplated) by the group but not taken are recorded. All "thumbing" is recorded. The computer even teaches the decision group how to use the "mouse" so that the group can move swiftly among the information and make its decisions adroitly.

One hundred seven decision groups have participated in the study to date. Each group was from a Florida elementary school, each contained three participants, one of whom was the particular school's principal, another an experienced teacher from within the same school and the third a relatively new teacher in the same school. One hundred of the groups were selected by the Florida State Department of Education to participate in a State funded week-long Department of Education's School Enhancement Institute. The remaining groups were from among the schools in the metropolitan Tampa area.

Each group worked alone with its computer and the "game." The average group took one hour thirty-six minutes to make sufficient decisions to exhaust the resources available for solving the problem as Principal in the mythical Centerville Elementary School. Four hundred thirty-seven person-hours of "playing" time were accumulated. In addition, each group was observed as it worked.

Background data on each group included its average age, predominant gender, average administrative experience, average total professional experience and home school location. A nine-second interval profile of each group's work was developed with which to analyze the group's decision pattern and compare it to others, and to statistically derived features.

The particular subject of this report is the three discernibly different decision patterns which have emerged and which appear to differentiate the high achieving decision groups from the mid and low achieving groups. Four possible substantive phases also appeared in varying measure for all groups. With deliberate intent the single criteria used to differentiate the three groups in the study being reported here was the extent to which the group applied the resources available, i.e. money, staff time, the effective schools research findings, and knowledge about the school, its community, students and teachers, to achieve improved student test performance results. Group performance patterns by age, gender, experience are topics for subsequent reports; this report is based strictly on achievement.

With a nine second abscissa interval extending beyond 1.5 hours when necessary and a 0.03 grade equivalent ordinate interval extending beyond 2.5 grade equivalent years when necessary, a clear registration of patterns

emerged. Among the more than seventeen million permutations and possible combinations of decisions, an individual group's "bar graph" decision sequence appears as a unique signature. Three patterns within these signatures have become apparent at this stage.

The high achieving decision groups appear to develop, what has been dubbed the "Sugar Ray" pattern. As these groups work through the problem, they perfect their decision-making skills. They begin to exhibit, not the making of individual unrelated decisions, but, the making of "combinations" of decisions. Hence the short-hand term, "Sugar Ray," since both the original "Sugar Ray" Robinson and the more recent "Sugar Ray" Leonard are noted as boxers who deliver combinations of punches; as contrasted to others who deliver one punch at a time.

The least effective decision-groups were dubbed "shoppers." Their behavior was reminiscent of someone wandering a shopping mall and making unrelated purchases, perhaps as an item catches the attention.

All groups exhibited an early pattern, not discernibly different one from the other, up through and including the first actual decision. All groups devoted substantial initial time to "thumbing," sometimes as much as twenty percent of the total "playing" time. And yet, the final outcome, as measured by the group's achievement, has not

been found to correlate, statistically, to the portion of total time spent initially "thumbing." It appeared as if all the decision groups devoted early energies to the task of scanning the system within which they would be making decisions.

The first decision, in practically every case, was a relatively inconsequential decision. From the patterns observed, the first decision may not, in actuality, be a decision made with the intent of achieving the groups' long range purpose of improving the grade equivalent scores of the Centerville fourth grade students. It appears the first group decision is made for the purpose of group-sought feedback as to the accuracy with which they have scanned the system within which they will be making subsequent, purposeful, decisions. Consequently, the cost/benefit potential of the first decision is almost always small; as if the group were thinking, "If we have not accurately scanned the system, the price we will have paid to learn will have been small and recoverable." As soon as each group received the feedback which was perceived by the group to represent assurances that the system was understood accurately, a second phase of activity began.

When graphed across a roll of computer paper; with the vertical axis representing the accumulated grade equivalent score achieved by the group on behalf of the fourth grade

students, and the horizontal axis representing elapsed time, a unique pattern of decision-making becomes evident. A sequential printout of the actual matters addressed by the group exhibits what might be described as "phases" to the group's decision-making. In short, decisions across time yield what is being named "patterns." the sequential substance of the decisions is being named "phases."

What has become apparent can therefore be summarized thusly, "The decision pattern of most groups is quite similar through the first, or 'scanning,' phase." The second phase seems quite unique to each group; but, does yield to generalizations across all groups.

Once assured they know how the system works (the scanning phase), each group, for varying lengths of time and incorporating varying numbers of decisions, appears to enter a phase in which they execute the members' personal "preconceived notions." Each member of the group, almost in turn, seems allowed by the group to advocate that the group act next upon that person's preconceived notion of what is best for fourth graders.

"More homework," for example may be a preconceived notion held by a member of the group. Almost always, the group will thumb to the research about the preconceived notion, read it, weigh the assigned staff energy and dollar costs against the predicted benefits and decide if they wish

to choose to make the expenditure. At times, when the preconceived notion is supported by the research, an audible cheer rings from the group.

At other times, when the research and the cost/benefit predictions are counter to the preconceived notion, the group will choose the notion none-the-less. Despite the research findings, despite the high cost and low benefit predictions, the preconceived notion will be acted upon. Despite earlier same day training to the contrary, if the group holds a mythological educational notion to be true, nothing seems to stop them from acting on the pre-conceived notion.

An example can illustrate the deeply held views exhibited in this phase. The Effective Schools Research indicates clearly the presence in effective schools of mutually understood and mutually embraced goals, in many cases mutually developed. A statement is programmed into the computer to appear on the cost/benefit screens on occasion which indicates to the group that benefits within the game can vary, and, if the group begins exhibiting the kinds of decision patterns found to exist in effective schools, the benefits could become greater than otherwise described; and vice versa. Statement notwithstanding, predicted benefit notwithstanding, research notwithstanding; if the group holds to a preconceived notion to the depth of a belief, the

probability is very great the group will act upon the pre-conceived notion, rather than initiate mutual goal development activities.

It appears that all decision groups, while in the "exhaustion of pre-conceived notions phase," make singular, unrelated decisions. Even though many of the groups, especially those which will later excel, eventually develop completely different decision patterns, all groups seem to pass through this embryonic "shoppers'" pattern.

In the subsequent, goal directed phase, however, the ultimate differences in decision patterns begins to become pronounced. Patterns, as used here, refers to the time dimension, across a roll of computer paper on which the decisions made are etched as bars.

Initially, for all groups, the decisions appear to be made singly, with no discernable time interval relation between decisions. But, the groups which ultimately prove to be the higher achieving two of the three types begin to show evidence of drawing decisions together, over time, into paired combinations. The highest achieving of the decision groups, after pairing decisions, begin then to draw a third decision into the pair, thus creating triplicates; "Sugar Ray" combinations, i.e., three decisions clearly made together; the time interval becoming, for the very best groups, little more than the "turn around time" it takes the

computer to register one decision and unfold as ready for another.

The middle achieving groups seem to continue pairs of decisions, interspersed with an almost randomly appearing single decision, never drawn into the pairs to create discernable triples. The low achieving decision groups seldom, if ever, draw decisions into groupings. The time interval between decisions is greater than for either of the other groups and appears random in nature; hence the "shoppers" name.

Sometimes using notes they had taken as they worked, but, equally as often from group memory, the "Sugar Ray" type group moves from decision location to decision location within the game, rapidly making one correct choice after another. Such groups seem to have become oblivious to all but the impact their work is having upon the fourth grade achievement scores, and celebrating self-imposed milestones with cheers and comments congratulatory to the "team."

Toward the end of this goal directed phase the "Sugar Ray" groups begin to display a unique characteristic, frequently dubbed the "Las Vegas" characteristic. These highest achieving groups exhibit, within each group, collective or group memory, knowing within their number the location of the remaining unmade decisions imbedded in the game and the cost/benefit potential of each. The group's

concentration becomes intense as it moves rapidly from decision to decision. Often, attempts to interrupt the group's activities are completely brushed aside. Persistent attempts at interruption are treated as attacks upon the group and receive severe admonitions. The members of the group seem to be working together so well they want nothing or no one to disturb the experience.

Inevitably these highly effective groups, working smoothly as a team, will spend down their resources to the point where they have miniscule amounts remaining, very high achievement scores, and a certainty that, somewhere in the computer there remains one little decision they could make which will boost their team's result to a "world's record." These high achieving teams will then commence to search intently for the one remaining decision they hope exists which they can afford and which will add to the team's achievement. Unless the team is told, forcibly, they have completed the activity and it is time to "quit" the game, the suspicion arises the team might continue the final search for hours.

A clear team reluctance to "quit" seems also to involve a desire to have the team's achievement recorded. Even though the team is assured that a record is kept within the computer, it appears that the impending disappearance of the results from the screen if/when the computer is turned off

is an upsetting event to the high achieving team. The team's members want a record. They want to be able to remember the event, and be remembered for it.

In summary, this study represents an early attempt to determine how school-based decisions groups actually make decisions and whether effective school-based decision groups make decisions differently from their less effective counterparts. A computer mimetic game was employed which placed the group into the principalship of an elementary school with the assignment to expend the resources provided so as to improve fourth grade achievement scores. The work of each decision group was observed. The actions of each group were recorded within the computer. One hundred seven decisions groups, each containing the principal from a Florida elementary school and two faculty from the same school, participated.

The decision groups appeared to pass through at least three distinct decision phases. The effective decision groups appeared to exhibit characteristics different from the less effective decision groups and different from the ineffective decision groups. In addition, the decision groups appeared to exhibit three distinct decision patterns. The effective decision groups appeared to mature into a pattern different from the less effective decision groups and different from the ineffective decision groups.

All three types of groups; the effective, the less effective, and the ineffective, prefaced actual decision phases with a scanning phase in which the goal appeared to be the development of a thorough understanding of the system within which decisions would be made. All three types of groups then moved into a phase in which pre-conceived notions about school improvement were exhausted. All three types of groups then moved on to a goal directed phase in which they used effective schools research provided within the "game" to improve the school's fourth grade achievement scores. In the latter portion of the goal-directed phase, the high achieving, effective, decision groups exhibited an intense concentration, rapid, unerring decisions, and a reluctance to stop.

During the scanning phase, all three types of decision groups exhibited a "thumbing" decision pattern in which decisions appeared unrelated to the ultimate goal but directed instead to an intermediate goal of understanding the system within which they would, subsequently, be making goal directed decisions. During the next phase, within which groups seemed to exhaust preconceived notions about school improvement, a similar, singular, decision pattern seemed to operate for all types of groups.

Within the goal directed phase, decision patterns became quite different. The ineffective decision groups

continued making singular decisions. The high achieving, effective, decision groups ultimately seemed to exhibit combined decisions made in rapid combinations of three's. The less effective decision groups seemed to mature to combinations of doubles, with randomly appearing singular decisions interspersed but not drawn together to make the rapid combinations of three's exhibited by the higher achieving and more effective school-based decision groups.

Finally, it does seem possible to suggest some tentative implications which might be drawn from these efforts and which might prove helpful to practitioners. Even though this study is based on the actions of one hundred seven actual school principals and two hundred fourteen school teachers, in school-based groups of threes from one hundred seven different elementary schools, the "n" is still suspect. Before these studies can move away confidently from observable and computer recorded patterns and phases into statistically certifiable phases and patterns, the "n" ought to be three times as large. There should be three hundred school-based groups, encompassing more than nine hundred individuals. Absent such quantity we must recall the admonition attributed to Gertrude Stein, "All generalizations are false, including this one."

If the senior school-based administrator is expected to operate in the years ahead as part of a larger school-based

Decision group, then such principals have a right to expect pre- and in-service training commensurate to the assignment. To provide principals with training and theory developed in the era of the "rugged individualist" might well be the equivalent of training an aircraft pilot in the ways of a propellor driven plane and then placing that pilot at the controls of a space shuttle.

If the school teacher is expected to operate in the years ahead as part of a larger school-based decision group, then such teachers have a right to expect pre- and in-service training commensurate to the assignment. To provide teachers with training and theory developed in the era of the "sacred isolate" might well be the equivalent of training an aircraft crew in the ways of a steward and then placing them in the cockpit of a space shuttle.

The training of an interdependent decision group means, by definition, training together, as the group they will be in reality. It means training in situations as close to "real" as can be developed. Perhaps only disasters shake us from folly, but, training to the contrary surely increases the probabilities of catastrophe.

Properly identified, trained and appointed school-based decision groups, when placed into a real school situation will, it appears, exhibit a frustrating initial time interval during which it will seem as though the group is

doing nothing; and all the training and preparations had been for naught. It would therefore seem likely that school district executives, working in an enterprise in which school-based decision groups are to operate, will, themselves, need training in the exercise of patience; at times, excruciating patience. It may well be such district executives will need training in the art and science of protectionism, i.e., the protection of school-based decision groups from citizens in various forms (media members, board members, pressure group members, etc.) who will want to see an immediacy of results which does not seem forthcoming from even the effective school-based decision groups. Patience with, and, protection of, employees may, in enterprises attempting to implement school-based decision groupings, prove to be the newest "leadership trait" needed by district executives.

The quality of early decisions emanating from school-based decision groups may depend heavily on the extent to which the professionals, individually and collectively, have been "keeping current," and/or "kept current" through district-wide means, on relevant educational research. Pre-conceived notions, imbedded to the extent they have become beliefs, which are contrary to the effective schools research, or the effective teaching research, could wreak havoc with otherwise perfect preparations, plans, patience,

and protectionism. Attention to, and a trust in, our own profession's research is not a pre-conceived notion that characterizes us. We do not, in general, hold to a belief in our own profession's research; which may well be the first pre-conceived notion that must change if school-based decision groups are to succeed.

Hosts of further questions issue forth from this embryonic study. Some questions cluster around the background data of the decision groups for which, deliberately in this instance, the study was not "controlled." Are there different patterns or different phases, or any other kinds of differences exhibited in school-based decision groups on the basis of the ages of members, the group's predominant gender, administrative experience, professional experience, etc.? In time, answers to questions of these kinds may prove helpful; as long as the search does not take a wrong turn into a formulaic cull DE sac; from which we might be led to believe that a group needs one (person) of this kind, two of this kind, experience to such and such a measure, etc. With the human being, and combinations of human beings, representing such beautiful wonderment, formulas would border on the ludicrous.

Another cluster of questions could receive a title honoring the memory of Luther Burbank. How much of a poorly

performing decision group has to be replaced in order to vitalize a group? How much of a highly performing group could be "transplanted" into a poorly performing group such that the highly performing group would survive and the poorly performing group would become vitalized? It is safe to observe that these types of questions have always haunted executives responsible for interdependent decision groups.

One final cluster of questions could be titled to honor the memory of Edward Thorndike. Is the study of school-based decision groups "transferable?" Is it really a question of studying site-based decision groups? In other words, would a site-based decision group in an auto plant, for example, exhibit decision phases and patterns similar to those from a branch bank, and would these be similar to a school-based decision group?

If the future contains, as Robert Reich suggests, "The Team As The Hero," not the rugged individualist, then studies of and about decision groups must multiply. (Reich, 1987) Perhaps we might, as is implied in the above, reserve to the high achieving, effective site-based decision group the hero-defining term "team."

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# CONCEPTUAL REPRESENTATION

School-Based  
Decision Groups

HUNT  
Based

